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Before the
Federal Communications Commission
Washington, D.C. 20554

DEPT. OF THE SECRETARY

ORIGINAL

In the Matter of

Reallocation of Television
Channels 60-69, the
746-806 MHz Band

ET Docket No. 97-157

TO: The Commission

COMMENTS OF TRIBUNE BROADCASTING

Tribune Broadcasting Company ("Tribune") hereby files its Comments in response to the Commission's Notice of Proposed Rulemaking, FCC 97-245, released July 10, 1997 ("Notice"), that proposes to reallocate channels 60-69 for fixed, mobile, and public safety uses. Tribune urges the Commission to eliminate any NTSC/VHF to DTV/UHF assignments on channels 60-69 in the DTV Table of Allotments before reallocating any of these channels for public safety or land mobile use.¹ These changes are necessary because the DTV power levels necessary to replicate the service areas of these NTSC/VHF stations will create unacceptable adjacent channel interference to the proposed public safety or land mobile operations on these channels.

¹ See In the Matter of Advanced Television Systems and Their Impact Upon Existing Television Broadcast Service, Sixth Report & Order, MM Docket No. 87-268, FCC 97-115 (released April 21, 1997).

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As the attached technical statement by Charles W. Rhodes ("Rhodes Statement") makes clear, the proposed use of channels 60-69 for land mobile and public safety entities is entirely inconsistent with the assignment of adjacent DTV channels attempting to replicate the service areas of NTSC/VHF stations. The high power levels required to replicate the service areas of these NTSC stations will produce unacceptable levels of interference to adjacent-channel land mobile and public safety operations -- interference that will not be eliminated by the FCC's RF emissions mask. See Rhodes Statement. The relative disparity in power between these high-powered DTV stations and the typical land mobile and public safety operations will make the use of even adjacent channels in the 60-69 range highly impractical, if not impossible.

For example, the Rhodes Statement demonstrates that the sideband splatter caused by KTLA(TV)'s assigned DTV operation on Channel 68 in Los Angeles would cause unacceptable levels of interference to adjacent-channel public safety and land mobile operations, which would be operating at significantly lower power levels. This problem is exacerbated in urban areas such as Los Angeles, where land mobile frequencies are fully utilized, and where there is a substantial and unmet need for additional land mobile and public safety spectrum.

Moreover, equipment solutions will not permit KTLA(TV) to eliminate harmful interference to the numerous land mobile operators in and around its transmitter site. See Broadcast Corp. of Georgia, 99 FCC 2d 901, 902 (1984). The installation of high power transmitter filters, cavity filters on land mobile receivers, and other measures to shield land mobile operators are not sufficient to eliminate interference to proximate land mobile facilities. See id. Given the severe interference that will be created to adjacent channel land mobile and public safety operations under the minimum mask attenuation of 46.005 dB required by the FCC, KTLA's DTV operations on Channel 68 will either severely interfere with land mobile and public safety operations on adjacent channels or KTLA will be forced to operate at a drastically reduced power level, thereby disenfranchising its current NTSC viewers and impeding the roll-out of DTV.

Finally, KTLA does not have the option of relocating adjacent land mobile operators to another frequency, because land mobile frequencies are fully utilized in the Los Angeles market.² Indeed, the very reason for this proceeding is that the Commission recognizes that in urban areas such as Los Angeles, there is a substantial and unmet need for additional land mobile spectrum -- a need recently recognized by Congress in the

² See Petition for Reconsideration of the County of Los Angeles, California, In the Matter of Advanced Television Systems and Their Impact Upon Existing Television Broadcast Service. (July 13, 1997), at 4-6.

Balanced Budget Act of 1997.³ Accordingly, Tribune urges the Commission to eliminate any NTSC/VHF to DTV/UHF assignments in the 60-69 channel range.

Respectfully submitted,



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³ Balanced Budget Act of 1997, P.L. No. 105-33 § 3004 (adding new Section 337 to Communications Act).

TECHNICAL STATEMENT OF CHARLES W. RHODES

This statement was prepared at the request of Tribune Broadcasting, the corporate parent of KTLA(TV), Channel 5, Los Angeles, California. I have analyzed KTLA's DTV Channel 68 assignment contained in the FCC's Sixth Report & Order. The Sixth Report and Order assigns a DTV ERP of 1000 kW to KTLA(TV). Based on my analysis detailed below, the allotment of 6 MHz DTV channels in the 60-69 range to NTSC VHF stations is totally incompatible with the proposed use of adjacent channels in that band by public safety and land mobile entities.

I calculated the spectral power density of KTLA(TV)'s DTV signal radiated with an ERP of 30 dBk (1,000 kW) within, and evenly distributed across the 6 MHz TV channel. Thus, the average radiated spectral power density is 1,000,000 watts per 6 MHz or 0.16 watts per Hertz. In the case of mobile radios, the receiver's pre-detection (I.F.) bandwidth is 6,000 Hz or 12,000 Hz. For analysis of potential interference from KTLA's DTV channel 68 into land mobile receivers, it is convenient to express the radiated power density per 6,000 Hz -- the IF bandwidth of mobile receivers. This is $6,000 \times 0.16 \text{ W/Hz} = 1,000 \text{ watts/per } 6,000 \text{ Hz}$ average spectral power density radiated anywhere within channel 68.

The FCC's RF Mask shows that the spectral power density immediately outside of the DTV channel must be at least 35 dB (maximum) below the average power density within the DTV channel or 46 dB relative to a 500 kilohertz portion of the DTV channel. The

maximum spectral power per 6,000 HZ mobile radio channel just below or above channel 68 is therefore limited to $.000316 \times 1000W = 0.316$ watts (average).

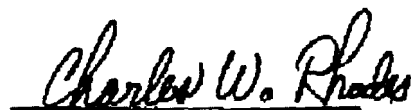
The transient peak to average power of the ATSC signal is 6 dB. If we accept that this must also apply to the sideband splatter as it is generated by non-linear amplification principally of those transient peaks, some of these transient peaks exceed 1.26 watts. I shall assume the peak power in a 6,000 Hz radio channel adjacent to channel 68 has a peak ERP of 1.26 watts. This is a significant amount of power per radio channel. When radiated from atop Mt. Wilson (where KTLA's DTV transmitter will be located), this power would affect mobile receivers over a wide area. In the case of mobile receivers having 12,000 Hz IF bandwidth, the interference per channel is twice that calculated above.

The uniformity of the power spectral density throughout the DTV channel makes it more difficult to protect Land Mobile operations on the (first) adjacent channels than is the situation with NTSC. The power in the visual part of the NTSC signal is primarily within some few hundred kilohertz of the Visual Carrier frequency, plus a smaller concentration around the upper chrominance sideband. This permits very effective filtering over the narrow bands of frequency in need of protection within an adjacent channel. Moreover, careful choice of frequencies for land mobile operations within the adjacent channels avoiding those having high spectral densities from NTSC signals is another possibility. Neither strategy would be appropriate for DTV.

In my opinion it would be a fundamental mistake to intermix 30 dBK DTV allotments on adjacent channels with proposed land mobile and public safety assignments within the 60-69 range. Some land mobile operations are within 25 kilohertz of the (shared) 6 MHz channel edge where the RF Mask permits maximum spectral power density of sideband splatter from DTV on an adjacent channel. The -35 dB spectral power density limit permitted at the FCC's RF mask edge certainly does not protect such land mobile operations when the adjacent channel DTV power is near the megawatt range of average ERP.

The 60-69 range of channels may be appropriate for both DTV service and public safety entities where the DTV channel is attempting to replicate a UHF analog channel rather than a VHF analog channel. In such situations, the DTV channel would require only 17 dBK of power and interference to adjacent land mobile and public safety channels would be significantly less.

Dated:



Charles W. Rhodes